

Synthetic Web Sling Safety Bulletin

⚠️ WARNING



This bulletin contains important safety information about the use of synthetic web slings. However, it **DOES NOT** contain all the information you need to know about handling, lifting and manipulating materials and loads safely. Sling use is only one part of a lifting system and it is your responsibility to consider all risk factors prior to using any rigging device or product. Failure to do this may result in severe **INJURY** or **DEATH** due to sling failure and/or loss of load. **Refer to the Mobile Boat Hoist Operation and Maintenance manual for additional safety information.**

SLING SAFETY

Sling Users and Inspectors

The inspection and use of the slings on a Marine Travelift Mobile Boat Hoist requires special knowledge and skill. The manual provided with the Mobile Boat Hoist provides the information needed to safely use the Mobile Boat Hoist but there is additional related information available from lifting industry sources. The most relevant sources are:

- American Society of Mechanical Engineers (ASME) B30.9
- Web Sling & Tie Down Association (WSTDA) WSTDA-WS-1
- National Safety Council (NSC) A10.42

The owner/user of the Marine Travelift Mobile Boat Hoist should be familiar with the contents of the above documents and assure that those persons involved in the use and operation of the Mobile Boat Hoist have been informed of the relevant portions.

Persons should not be assigned to inspection duties or use the slings provided with the Mobile Boat Hoist until they have been appropriately trained, and verified as qualified, to perform those assigned functions with the slings.

Failure to use properly trained and qualified persons in the inspection and use of the slings and rigging on the Mobile Boat Hoist will create unsafe operating conditions.

A qualified person is defined in ASME B30.9 as "a person who, by possession of a recognized degree or certificate of professional standing in an applicable field, or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter and work". Also, refer to U.S. Department of Labor - Occupational Safety & Health Administration Standard Number 1910.184.

Sling Description

Slings provided with a Marine Travelift Mobile Boat Hoist are constructed of woven high tensile synthetic yarns (nylon or polyester), that offer suitable characteristics for use as a Mobile Boat Hoist web sling in the fabrication of the web sling. The sling has the following characteristics when provided:

- Sufficient certified material tensile-strength that will meet the sling capacity requirements for use as a sling on the Mobile Boat Hoist as defined by the requirements of ASME/ANSI B30.9.
- Uniform webbing thickness and width that is manufactured and assembled in accordance with standards published by the WSTDA.

Sling Identification

Each Marine Travelift provided sling is marked with our name and shows the:

- Name or trademark of the sling manufacturer.
- Manufacturer's code or stock number.
- Rated load for a vertical basket hitch.
- Type of synthetic web material.
- Designed length at sling delivery.

The sling user must maintain the sling identification so as to be legible for the life of the sling.

SLING AND RIGGING GEAR SAFETY

Use

- The weight of the load placed on the sling and rigging must be within the rated load of the component with the lowest rated capacity.
- Shortening, lengthening, or adjusting the slings can only be done by methods approved in the Marine Travelift Mobile Boat Hoist Manual provided with the Mobile Boat Hoist.
- Slings or rigging gear that appear to be damaged must not be used unless inspected and approved as usable by inspections accomplished by a qualified person.
- Slings must be hitched in a manner approved in the Marine Travelift Mobile Boat Hoist Manual provided with the Mobile Boat Hoist.

- Sharp corners in contact with the sling must be padded with material of sufficient strength to prevent damage to the sling. Marine Travelift provides Chine and Keel pads to protect most of the sling but the user must assure that any other exposed sling areas are protected as needed. See "PROPER USE OF CHINE AND KEEL PADS" located at the end of this pamphlet and Section 3, Operation in the machine's Operation and Maintenance Manual.
- All portions of the human body must be kept from between the sling, rigging gear and the load.
- Personnel must never ride on the sling or loads supported by the sling.
- Shock loading should be avoided.
- Slings should not be pulled from under a load when the load is resting on the sling.
- Slings should not be crossed or overlapped.
- Slings should not be driven over with vehicles or other equipment.
- Slings should be stored in a cool, dry, and dark place to inhibit shrinkage and environmental damage caused by ultraviolet light and chemical mists.
- Twisting and kinking of the sling legs while under load must be avoided.
- The load must be balanced to inhibit slippage and rigged as described in the Marine Travelift Mobile Boat Hoist Manual provided with the Mobile Boat Hoist.
- Slings should be rigged as described in the Marine Travelift Mobile Boat Hoist Manual provided with the Mobile Boat Hoist and long enough to assure that the rated load is adequate when the angle of the legs are taken into consideration.
- Slings and rigging gear should not be dragged on the ground or over an abrasive surface.
- Slings and rigging gear should be inspected from end to end prior to each use to verify their suitability for use.
- Exposure of nylon or polyester web slings to sunlight or ultraviolet light sources degrades the strength of the sling webbing. A qualified sling inspector should be regularly consulted regarding the sling's material condition and suitability for continued use.
- Suspended loads could fall. A falling load can cause injury or death. Never stand or travel under suspended loads.

ENVIRONMENTAL CONDITIONS

Temperature

Web slings must not be used at temperatures in excess of 194° F (90° C) or temperatures below -40° F (-40° C).

Chemically-Active Environments

Slings exposed to chemically-active environments can have their strength detrimentally affected. Activities such as the washing of a boat can degrade the slings if there is a chemical in the washing solution that affects sling materials. Three such known chemicals that affect the strength of a synthetic sling are "acids", "alkalis" and "ethers". Do not wash boats while in slings.

Ultraviolet Light

Ultraviolet light comes from the sun as well as sources such as welding and certain incandescent lights. Nylon and polyester webbing will lose strength when exposed to ultraviolet light; such exposure should be minimized to the extent possible.

NOTICE

Degradation can take place without any visible indications. Have a qualified inspector inspect the slings at regular intervals.

The primary factor that determines the degree of webbing-strength loss is the amount of time of its exposure to ultraviolet light. Environmental factors such as weather conditions (clouds and overcast) and geographic location (sun angle, intensity and length of daylight) impact the effect that the exposure's duration has on the webbing.

Salt Water

Immersion in salt water will affect the sling's strength while it is saturated but this strength loss is anticipated, if only while the sling is saturated and is a basis for having a design factor for the sling in excess of its rated load. There is no long term loss of sling strength solely due to immersing a sling in water.

Water containing particles such as salt, sand or other suspended materials can cause some long term strength degradation as those particles can enter the sling webbing and cause wear on the webbing fibers. It is recommended after each day's operation in water containing suspended particulates, the slings be washed down with fresh water and a cleaning agent that is not damaging to nylon or polyester web slings.

INSPECTIONS

Routine inspections of the sling and rigging hardware, by appropriately qualified persons, are required to assure that slings are suitable for use in a lifting capacity.

All new, altered, modified, or repaired slings and rigging hardware must be inspected by a qualified person to verify their compliance with the applicable provisions of ASME B30 standards and the contents of this pamphlet before being placed into service.

Before each day's first use, and before each use, a sling and rigging inspection must be accomplished. Refer to the inspection criteria in Section 4, Maintenance in the machine's Operation and Maintenance manual. Slings and rigging must also be appropriately inspected before each lift is made during the day's operations.

Periodic inspections of the slings and rigging hardware must be made and their frequency should be based on:

- Frequency of use.
- Severity of service conditions.
- Experience gained on the service life of the similar gear used in similar applications.

Written, detailed sling and rigging inspection records should be kept for all slings. These records should show a description of the new sling and its condition on each subsequent inspection.

REPAIRS

- Sling webbing should never be repaired.
- Temporary repairs to webbing, fittings, or stitching is not permitted.

STORAGE

Web slings should be stored in a cool, dry and dark place when not in use to inhibit shrinkage and to prevent continued loss of strength through exposure to ultraviolet rays. Web slings must not be stored in chemically-active environments.

DAILY SCHEDULED MAINTENANCE (BEFORE OPERATION)

Inspect Synthetic Web Slings

INSPECTION

Slings should be inspected by a qualified person each time they are used. While in use, the user should make certain the slings are not damaged by:

- **Cutting** (evidenced by straight line damage to one or more layers of the webbing yarns on the side of the cutting contact usually caused by edges of the loads or adjacent equipment).
- **Snagging**, (evidenced by pulls of the webbing surface yarns away from their fabricated surface usually caused by nails or hull protrusions).

- **Wear** (evidenced by broken synthetic fibers at the contact surface or scratch marks on metal surfaces and can be on any part of the load bearing sling or rigging).
- **Pinching or Crushing** (evidenced by the material's inability to sit or lay in the position that it was fabricated or manufactured or to no longer maintain a dimension to which it was fabricated or manufactured).
- **Heat Damage** (caused by welding, burning or being pulled across a surface and evidenced by a charring and melted condition of the webbing).
- **Chemical Damage** (evidenced by stains or brittleness of the webbing or a melted appearance).
- **Foreign Matter** (evidenced by a "gritty" feel to the synthetic webbing and possibly giving off a "dust" when the webbing is vigorously shaken).
- **Knots** (evidenced by the sling webbing not laying flat or curving in the width of the webbing).
- **Ultraviolet Damage** (evidenced by a stiffness in the webbing from its "new" condition and a lack of "slipperiness" to the touch).

NOTE

There are multi-colored yarns included in the webbing material at various locations. If any of these yarns become visible the sling must be removed from service and a qualified sling inspector consulted for further action.

SLING REMOVAL CRITERIA

A sling must be removed from service if damage such as the following (but not limited to) is visible:

- Any condition that causes the user or inspector to doubt the sling or rigging's ability to be used safely.
- Cracks, bends, distortions, pitting or significant abrasion in any metal fitting rigging component of the sling or gear.
- Missing or illegible sling identification information.
- Acid or caustic burns in the sling webbing.
- Melting or charring of any part of the sling webbing.
- Holes, tears, cuts or snags in the sling webbing.
- Excessive abrasive wear to any structural part of the sling or rigging.
- Knots, or evidence of previous knotting in any part of the sling.
- Visible multi-colored yarns at any location in the webbing.

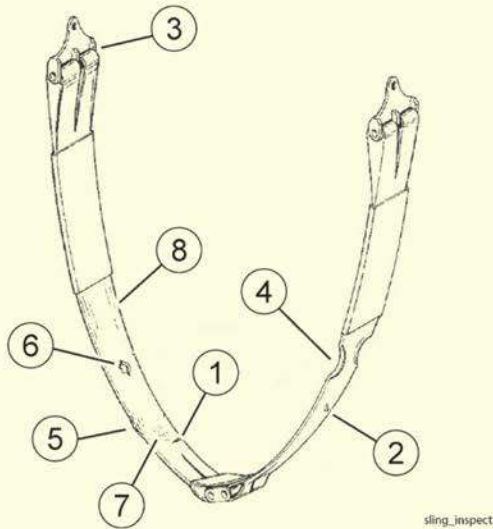


Figure 1-1. Examples of Sling Damage

1	Cutting
2	Snagging
3	Wear (shown at eye and body of sling)
4	Pinching or Crushing
5	Heat Damage
6	Chemical Damage
7	Foreign Matter
8	Stretching

PROPER USE OF CHINE AND KEEL PADS

NOTICE Synthetic web slings are damaged by cutting, snagging, pinching, crushing, overloading, etc. The slings should be inspected by a qualified person handling them prior to each time they are used. See Section 4, Maintenance in the machine's Operation and Maintenance manual.

NOTICE Damage to the slings can be caused by edges or contours in a boat hull. Abrasion to localized areas of synthetic web slings will create weak spots that can lead to failure. Therefore, use chine pads or other adequate protection whenever wear on the slings is possible.

CHINE PADS

The chine pads consist of two different materials sewn together. One side is a thick black belting and the other side is woven synthetic material (Cordura). Chine pads also have synthetic loops sewn into the top end of the pad. These loops are used to thread elastic rope through the chine pads which is then tied to sling shackles. Use the side with the black belting toward the hull as shown in Figure 1-2, Chine and Keel Pads, and adjust the elastic rope to position the chine pads at the areas of the boat hull that would cause abrasion, cutting or wear on the synthetic slings.

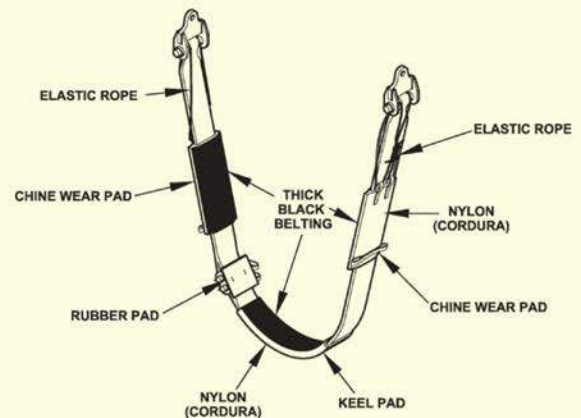


Figure 1-2. Chine and Keel Pads

KEEL PADS

Keel pads are provided with this Mobile Boat Hoist and **must** be used to prevent damage to the synthetic web slings. Damage can be caused by edges or contours in a boat hull. Abrasion to localized areas of synthetic web slings will create weak spots that can lead to failure. The keel pads supplied with the Mobile Boat Hoist consist of two different materials sewn together. One side is a synthetic material (Cordura), a very strong and abrasive material and the other side is thick black belting. The keel pads are attached to the bottom area of the longer sling half by a series of straps and buckles sewn onto the keel pad. It is **imperative** that the thick black belting of the keel pads is placed toward the keel of the boat (see Figure 1-3).

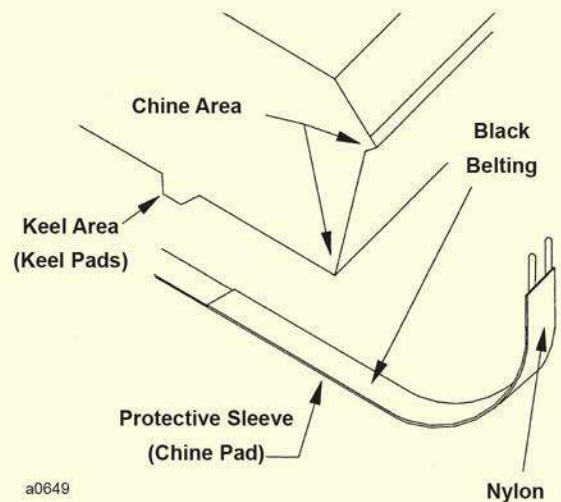


Figure 1-3. Sling and Sleeve

NOTICE Refer to the Operation and Maintenance manual for proper boat handling information.